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Group 2700

1 at increasingly critical memory thresholds, wielding increasing operating
2 system control over said one or more application programs to [minimize] reduce
3 memory usage.

4
5 2. (Amended) A [system] method as recited in claim 1, wherein the
6 [step of] wielding increasing operating system control comprises [the following
7 steps]:

8 at a less critical memory threshold, [interacting with] communicating a
9 request to at least one of the application programs for the at least one application
10 program to limit its use of memory; and

11 at a more critical memory threshold, terminating at least one of the
12 application programs without allowing its further execution.

13
14 3. (Amended) A [system] method as recited in claim 1, wherein the
15 [step of] wielding increasing operating system control comprises [the following
16 step]:

17 prompting a user to [designate] select at least one of the application[s]
18 programs and then the operating system requesting [it to] that the at least one
19 selected application program close itself.

20
21 4. (Amended) A [system] method as recited in claim 1, wherein the
22 [step of] wielding increasing operating system control comprises [the following
23 step]:

24 prompting a user to [designate] select at least one of the application[s]
25 programs and then terminating it without allowing its further execution.

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2 5. (Amended) A [system] method as recited in claim 1, wherein the
3 [step of] wielding increasing operating system control comprises [the following
4 steps]:

5 at a first memory threshold, requesting at least one of the application
6 programs to limit its use of memory;

7 at a second memory threshold, requesting at least one of the application
8 programs to close itself; and

9 at a third memory threshold, terminating at least one of the application
10 programs without allowing its further execution.

11
12 Sub B2 6. (Amended) A [system] method as recited in claim 1, wherein the
13 [step of] wielding increasing operating system control comprises [the following
14 steps]:

15 at a first memory threshold, requesting at least one of the application
16 programs to limit its use of memory;

17 at a second memory threshold, prompting a user to designate at least one of
18 the application programs and then requesting it to close itself; and

19 at a third memory threshold, prompting the user to designate at least one of
20 the application programs and then terminating it without allowing its further
21 execution.

22
23 7. (Amended) A [system] method as recited in claim 1, further
24 comprising [the following additional step]:

25 at one or more of the memory thresholds, reclaiming unused stack memory.

1
2 8. (Amended) A [system] method as recited in claim 1, further
3 comprising [the following additional step]:

4 at one or more of the memory thresholds, discarding read-only memory.
5

6 9. (Amended) A computer-readable storage medium having computer-
7 executable instructions for performing the [steps] method recited in claim 1.
8

9 10. (Amended) A computer-readable storage medium having
10 instructions for controlling memory usage in a computer system having limited
11 physical memory, wherein one or more application programs execute in
12 conjunction with an operating system, the instructions being executable by the
13 computer system to perform [steps] acts comprising:

14 at a first memory usage threshold, requesting at least one of the application
15 programs to close itself; and

16 at a second memory usage threshold that is more critical than the first
17 memory usage threshold, terminating at least one of the application programs
18 without allowing its further execution.
19

20 11. (Amended) A computer-readable storage medium as recited in
21 claim 10, the instructions being executable to perform additional [steps] acts
22 comprising:

23 before performing the requesting step, prompting a user to select one of the
24 application programs to be closed; and
25

1 before performing the terminating step, prompting the user to select one of
2 the application programs to be terminated.

3
4 12. (Amended) A computer-readable storage medium as recited in
5 claim 10, the instructions being executable to perform additional [steps] acts
6 comprising:

7 before performing the requesting step, requiring a user to select one of the
8 application programs to be closed; and

9 before performing the terminating step, requiring the user to select one of
10 the application programs to be terminated.

11
12 13. (Amended) A computer-readable storage medium as recited in
13 claim 10, the instructions being executable to perform an additional [step] act
14 comprising:

15 at a further memory threshold that is less critical than the first and second
16 memory usage thresholds, requesting at least one of the application programs to
17 limit its use of memory.

18
19 14. (Amended) A computer-readable storage medium as recited in
20 claim 10, the instructions being executable to perform an additional [step] act
21 comprising:

22 reclaiming unused stack memory before requesting at least one of the
23 application programs to close itself and before terminating at least one of the
24 application programs.

1 15. (Amended) A computer-readable storage medium as recited in
2 claim 10, the instructions being executable to perform an additional [step] act
3 comprising:

4 discarding read-only memory before requesting at least one of the
5 application programs to close itself and before terminating at least one of the
6 application programs.

7
8 16. (Amended) A computer-readable storage medium as recited in
9 claim 10, the instructions being executable to perform additional [steps] acts
10 comprising:

11 a reclaiming unused stack memory and discarding read-only memory before
12 requesting at least one of the application programs to close itself and before
13 terminating at least one of the application programs.

14
15 17. (Amended) A method of controlling memory usage in a computer
16 system having limited physical memory, wherein one or more application
17 programs execute in conjunction with an operating system, the method comprising
18 [the following steps]:

19 at a first memory usage threshold, requesting at least one of the application
20 programs to limit its use of memory;

21 at a second memory usage threshold that is more critical than the first
22 memory usage threshold, requesting at least one of the application programs to
23 close itself;

1 at a third memory usage threshold that is more critical than the first and
2 second memory usage thresholds, terminating at least one of the application
3 programs without allowing its further execution; and

4 reclaiming unused stack memory and discarding read-only memory before
5 requesting at least one of the application programs to close itself and before
6 terminating at least one of the application programs.

7
8 18. (Amended) A method as recited in claim 17, wherein the reclaiming
9 and discarding [steps] are performed at further memory usage thresholds that are
10 set in relation to the second and third memory usage thresholds.

11
12 19. (Amended) A method as recited in claim 17, wherein the reclaiming
13 and discarding [steps] are performed at further memory usage thresholds that are
14 set in relation to the first, second, and third memory usage thresholds.

15
16 20. (Amended) A method as recited in claim 17, further comprising [the
17 following additional steps]:

18 before performing the requesting [step], prompting a user to select one of
19 the application programs to be closed; and

20 before performing the terminating [step], prompting the user to select one
21 of the application programs to be terminated.

22
23 21. (Amended) A method as recited in claim 17, further comprising [the
24 following additional steps]:
25

1 before performing the requesting [step], requiring a user to select one of the
2 application programs to be closed; and

3 before performing the terminating [step], requiring the user to select one of
4 the application programs to be terminated.

5
6 22. (Amended) A computer-readable storage medium having computer-
7 executable instructions for performing the [steps] method recited in claim 17.

8
9 23. (Amended) A computer system comprising:

10 a processor;

11 an operating system that is executable by the processor and that utilizes the
12 physical memory;

13 a virtual memory system that includes physical memory but does not
14 include secondary storage;

15 one or more application programs that utilize the virtual memory system;

16 wherein the operating system is configured to perform the following [steps]

17 acts:

18 monitoring physical memory usage; and

19 at increasingly critical physical memory usage thresholds, wielding
20 increasing control over said one or more application programs to
21 [minimize] reduce physical memory usage.

22
23 24. (Amended) A computer system as recited in claim 23, wherein the
24 [step] act of wielding increasing control comprises the following [steps] acts:
25

1 at a less critical memory threshold, [interacting with] communicating a
2 request to at least one of the application programs for the at least one application
3 program to limit its use of memory; and

4 at a more critical memory threshold, terminating at least one of the
5 application programs without allowing its further execution.

6
7 25. (Amended) A computer system as recited in claim 23, wherein the
8 [step] act of wielding increasing control comprises the following [step] act:

9 prompting a user to [designate] select at least one of the application[s]
10 programs and then the operating system requesting [it to] that the at least one
11 selected application program close itself.

12
13 26. (Amended) A computer system as recited in claim 23, wherein the
14 [step] act of wielding increasing control comprises the following [step] act:

15 prompting a user to [designate] select at least one of the application[s]
16 programs and then terminating it without allowing its further execution.

17
18 27. (Amended) A computer system as recited in claim 23, wherein the
19 [step] act of wielding increasing control comprises the following [steps] acts :

20 at a first memory threshold, requesting at least one of the application
21 programs to limit its use of memory;

22 at a second memory threshold, requesting at least one of the application
23 programs to close itself; and

24 at a third memory threshold, terminating at least one of the application
25 programs without allowing its further execution.

Sub 23 28. (Amended) A computer system as recited in claim 23, wherein the
3 [step] act of wielding increasing control comprises the following [steps] acts:

4 at a first memory threshold, requesting at least one of the application
5 programs to limit its use of memory;

6 at a second memory threshold, prompting a user to designate at least one of
7 the application programs and then requesting it to close itself; and

8 at a third memory threshold, prompting the user to designate at least one of
9 the application programs and then terminating it without allowing its further
10 execution.

Al Sub 23 29. (Amended) A computer system as recited in claim 23, wherein the
12 operating system is further configured to perform the following additional [step]
13 act:

14 at one or more of the memory thresholds, reclaiming unused stack memory.
15
16

17 30. (Amended) A computer system as recited in claim 23, wherein the
18 operating system is further configured to perform the following additional [step]
19 act:

20 at one or more of the memory thresholds, discarding read-only memory.
21

22 31. (Amended) A computer system as recited in claim 23, wherein the
23 [step] act of wielding increasing control comprises the following [steps] acts:

24 at a first memory threshold, requesting at least one of the application
25 programs to limit its use of memory;

1 at a second memory threshold, prompting a user to [designate] select at
2 least one of the application programs and then requesting [it to] that the at least
3 one selected application program close itself;

4 at a third memory threshold, prompting the user to [designate] select at
5 least one of the application programs and then terminating it without allowing its
6 further execution; and

7 before prompting the user, reclaiming unused stack memory and discarding
8 read-only memory.

9
10 32. (Amended) A method of controlling memory usage in a computer
11 system having limited physical memory, wherein one or more application
12 programs execute in conjunction with an operating system, the method comprising
13 [the following steps]:

14 monitoring memory usage; and

15 when memory usage is high, sending a message from the operating system
16 to at least one of the application programs requesting the application program to
17 [minimize] reduce its current use of memory.

18
19 33. (Amended) A method as recited in claim 32, further comprising [a
20 step of] sending the message to the application program when memory usage
21 reaches a defined threshold.

22
23 34. (Amended) A method as recited in claim 32, wherein the
24 application programs have respective message loops, the method further
25

1 comprising [a step of] sending the message to the application program through its
2 message loop.

3
4 35. (Amended) A method as recited in claim 32, wherein the
5 application programs have respective message loops, the method further
6 comprising [a step of] sending the message to a particular application program that
7 was least recently active.

8
9 36. (Amended) A computer-readable storage medium having computer-
10 executable instructions for performing the [steps] method recited in claim 32.

11
12 37. (Amended) A computer-readable storage medium having
13 instructions for controlling memory usage in a computer system having limited
14 physical memory, wherein one or more application programs execute in
15 conjunction with an operating system, the instructions being executable by the
16 computer system to perform [steps] acts comprising:

17 monitoring memory usage; and

18 at a defined memory usage threshold, sending a message from the operating
19 system to at least one of the application programs requesting the application
20 program to [minimize] reduce its current use of memory.

21
22 38. (Amended) A computer-readable storage medium as recited in
23 claim 37, wherein the application programs have respective message loops, the
24 instructions being executable to perform a further [step] act of sending the
25 message to the application program through its message loop.

1
2 39. (Amended) A computer-readable storage medium as recited in
3 claim 37, wherein the application programs have respective message loops, the
4 instructions being executable to perform a further [step] act of sending the
5 message to a particular application program that was least recently active.
6

7 40. (Amended) An application program that resides in a computer-
8 readable memory for execution by a processor in conjunction with an operating
9 system, the application program having a message loop that receives messages
10 from an operating system, the application program being responsive to a particular
11 message received through its message loop to [minimize] reduce its current use of
12 memory.
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